

Work Order ID 52973

October 20, 2009 7:55:44 AM



Page 1

Item ID: D212-664-201

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.05



Customer:

Reference:

Run Start



Approvals:

Process Plan: *BL*

Date: *09-10-20*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D212-664-241

Rev C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D212-664-201 *CHG003*

H for BG 09/11/11

110

0.00



Pick Kit

Packaging

Packaging

Memo

0.00

Packaging

(14) MB 09-11-05

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D212-664-241 using CNC bender program 212-af and Folio FT007

(14) MB 09-11-05

Work Order ID 52973

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Item ID: D212-664-201

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Revision ID: C

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Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

130

QC15- Crosstube Dimensional Check

0.00



2) 8 sealulos

QC

Memo

0.00

40

4

Quality Control

140

Crosstubes

0.00



0.00

Crosstubes

Memo

Crosstubes

1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551

2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

4-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241

— AWM 9-11-06

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Item ID: D212-664-201

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Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coats as within 24 hours of bending and drilling

1 - ALM 9.125

160

QC3- Inspect Part Finish

0.00



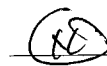
QC

Memo

0.00

Quality Control

⇒ S o r l u l o s



170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

⇒ S o r l u l o s



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Item ID: D212-664-201

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Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Outsource process - NDT per QSI038 4.1	0.00							
	Outsource2	0.00							
	Outsource process - NDT								
	Memo								
	Liquid Penetrant Inspection as per QSI 038								
	Issue P/O: <u>10710</u>								
	LPI as per ASTM 1417 Level 2								
	Attach copy of NDT results to work order								
190	Receive & Inspect for Damage & Mat'l Certs	0.00							
	Packaging								
	Packaging	0.00							
	Packaging								
	Memo								
	Ensure copy of NDT results attached to work order.								
200	QC5- Inspect part completeness to step on W/O	0.00							
	QC	0.00							
	Quality Control								
	Inspect for damage & ensure results are as per Dwg D212-664-241								

09-11-5

09-11-5

09-11-06

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Item ID: D212-664-201

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Stop



Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

Spray Painting per QSI005 4.2

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2
2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 6:00

Finish Time: 7:00

PAINT:

Start Time: 10:00

Finish Time: 11:00

RT 09-11-06

220

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

m 09 11 09 ①

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Item ID: D212-664-201

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Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

230



Crosstubes

Crosstubes

0.00

0.00

Memo

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe

2-Install supports with magnobond as per QSI 015. Adhere for 12 Hrs

A/R 6398 Magnobond Batch: 112417

Expiry Date: 01/2011

3-Install clamps as per Dwg D212-664-241. Torque clamps to 80-100 in lb. → ml 09 11 11 ①

ml 09 11 11 ①

240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

1 09 11 11 ①

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Item ID: D212-664-201

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

Signature 9/11/11

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

Signature 09/11/11

Signature

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D212-664-201

Signature RE

Signature 9/11/11

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Item ID: D212-664-201

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/11/11

mf 09-11-11

Picklist Print

October 20, 2009 7:55:51 AM

Page 1

Work Order ID: 52973

Parent Item: D212-664-201RevC

Parent Item Name: Crosstube Aft

Comments:

Start Date: 20/10/2009

Required Date: 02/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D212-664- 201TRNRevC		Manufactured	No			110	Each	3.0000	1.0000			



Crosstube Turning Detail



B-53177

MB 09-11-05

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FG	3	
46386	1	
52740	1	
52741	1	

D3595-063-530RevA

Manufactured No



RUBBER CUSHION

230 Each 204.0000 2.0000



<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	204	
40780	2	
44998	2	
50030	96	
51776	104	

W1 09 1110

Picklist Print

Page 2

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Work Order ID: 52973



Parent Item: D212-664-201RevC



Parent Item Name: Crosstube Aft

Start Date: 20/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2940-1RevB		Manufactured	No			230	Each	40.0000	2.0000			

Support

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

40

24367

4

25594

2

45203

14

47748

20

11 10

October 20, 2009 7:55:51 AM

Shop Packet Print

Page 2

Picklist Print

Page 3

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Work Order ID: 52973



Parent Item: D212-664-201RevC



Parent Item Name: Crosstube Aft

Start Date: 20/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21920-28 		Purchased	No			230	Each	170.0000	4.0000			
Clamp(per MIL-DTL-8783C)												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	5	
105884	5	
Main Warehouse		
ST	165	
106864	5	
108466	9	
108847	7	
109181	14	
109965	2	
111281	2	
<u>111734</u>	26	
112624	50	
112863	50	

11/09/10

D3428-1RevA

Manufactured No

250

Each

25.0000

1.0000



Placard

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST096	25	
50790	25	

50790

October 20, 2009 7:55:51 AM

Shop Packet Print

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Picklist Print

Page 4

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Work Order ID: 52973



Parent Item: D212-664-201RevC



Parent Item Name: Crosstube Aft

Start Date: 20/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21042L6 		Purchased	No			250	Each	649.0000	6.0000 ✓			
Nut												

[Handwritten signature]

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	649	
105077	22	
110002	5	
111548	22	
111578	400	
112492	200	

4p

AN960JD616



Washer

Purchased

No

250

Each

870.0000

18.0000 ✓

m112452

[Handwritten signature]

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	870	
112314	370	
112828	500	

m112314

[Handwritten mark]

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Shop Packet Print

Page 4

Picklist Print

October 20, 2009 7:55:51 AM

Work Order ID: 52973

Parent Item: D212-664-201RevC

Parent Item Name: Crosstube Aft


Start Date: 20/10/2009

Required Date: 02/11/2009


Start Qty: 1.00

Required Qty: 1.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN6-40A  Bolt		Purchased	No			250	Each	108.0000	4.0000 ✓			

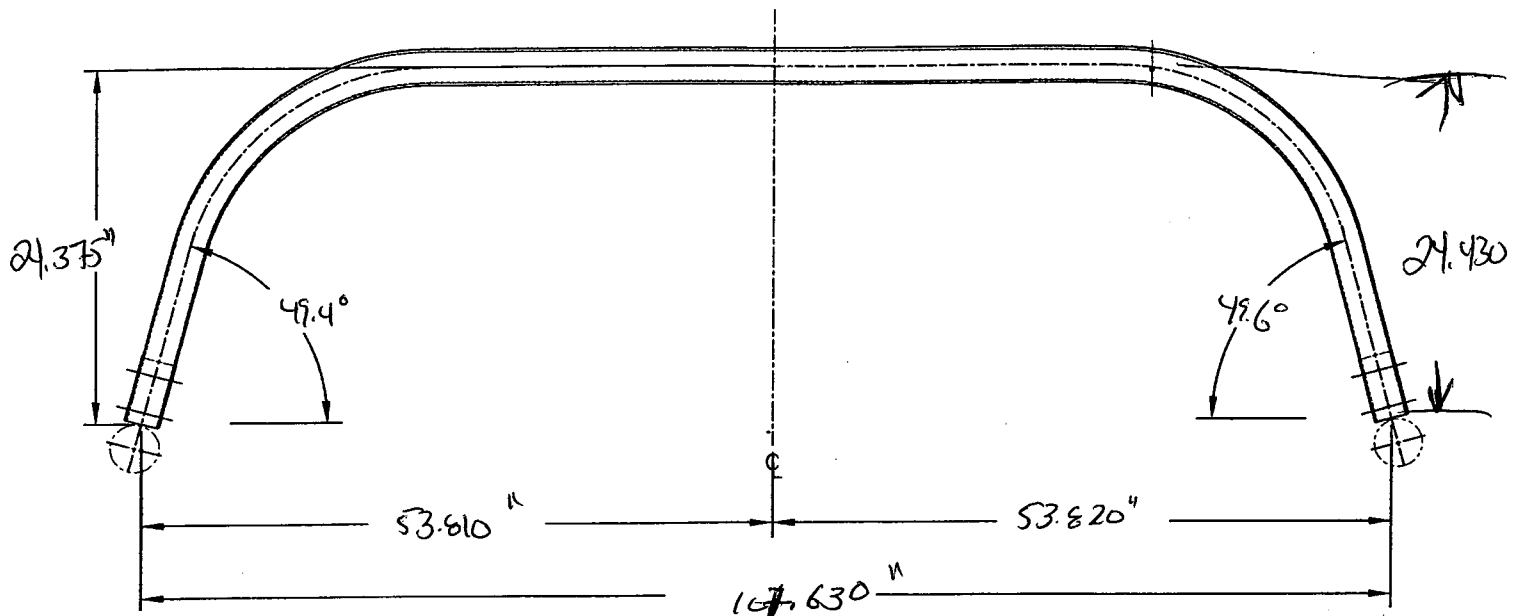
<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	108	
112612	8	
112679	50	
112828	50	

AN6-41A  Bolt		Purchased	No			250	Each	70.0000	2.0000 ✓			
--	--	-----------	----	--	--	-----	------	---------	----------	--	--	--

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	70	
111605	25	
112489	20	
112805	25	

DART AEROSPACE LTD		Work Order:	52973
Description: Crosstube High Aft (205/212)		Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70



Comments

QC15 Inspection	<i>S</i>
Date	09/11/05

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SHOP COPY
RETURN TO
ENGINEERING
CONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 52973
P/O 10-10-20

DART

RELEASED
17.04.24 P
PER EEN 289

DEO ATTACHED

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED L	APPROVED H	DRAWING NO. D212-664-241	REV. C SHEET 1 OF 3
DATE 07.03.08		TITLE CROSSTUBE ASS'Y (205/212 HI AFT) NTS	
A	00.12.12	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
C	07.03.08	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	

Qty	Part Number	Description
X	D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
1	D6006-129	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP (OR MS21920-30)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

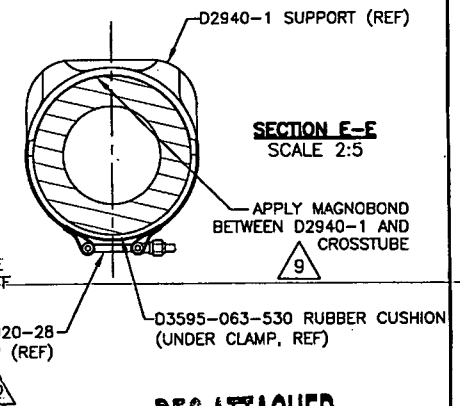
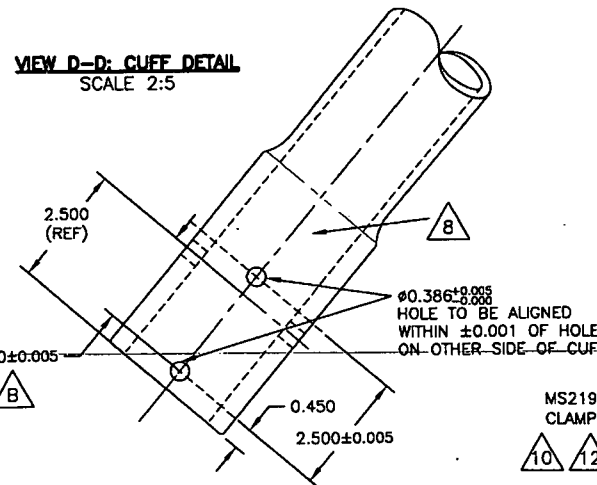
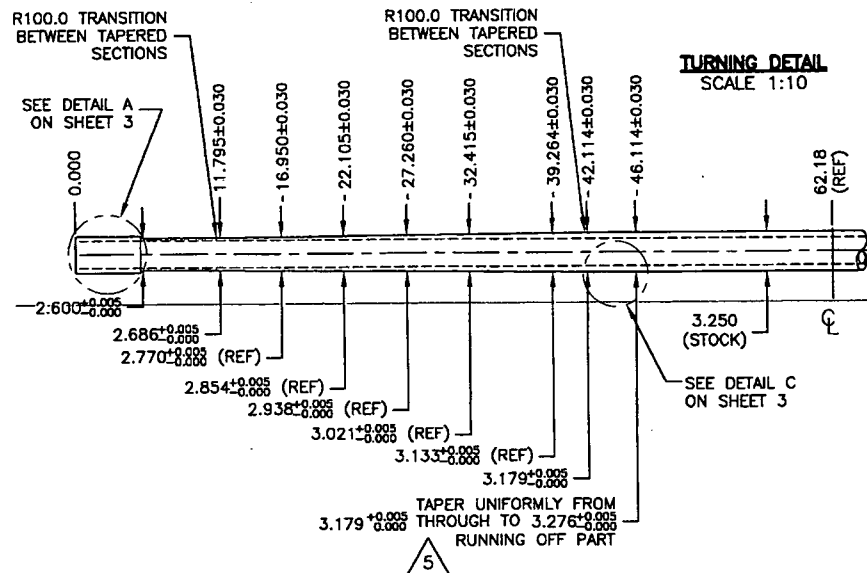
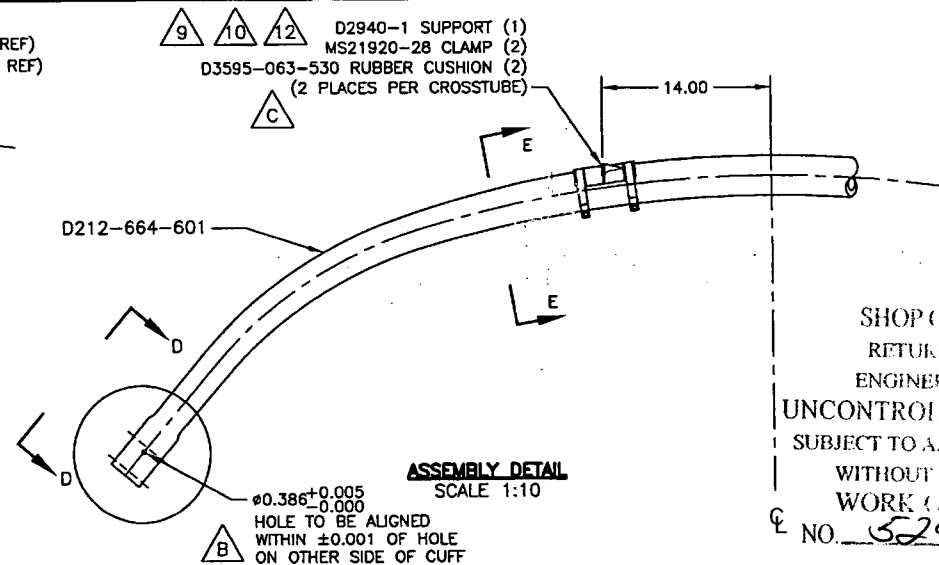
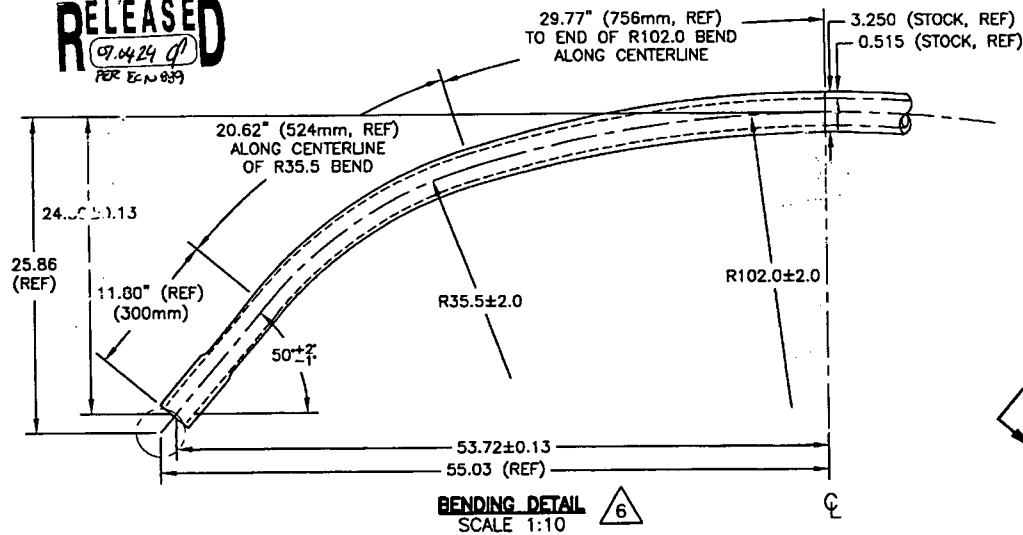
GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.36±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 10) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1 SUPPORT ON TOP SIDE OF CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT
NOTE: MS21920-30 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

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07.04.24
PER E.P. 0.39



SHOP
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WORK
NO. 52973

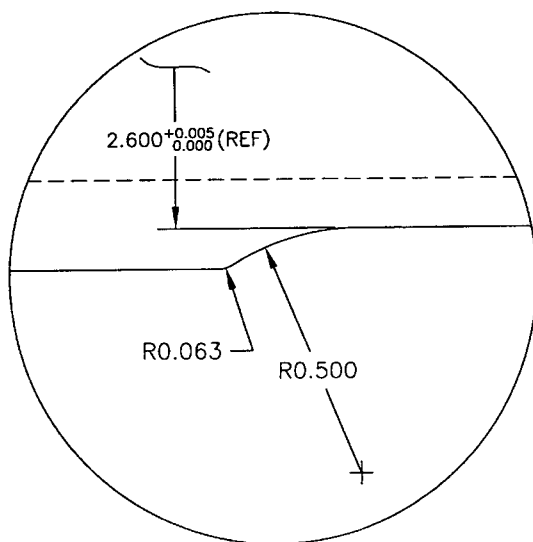
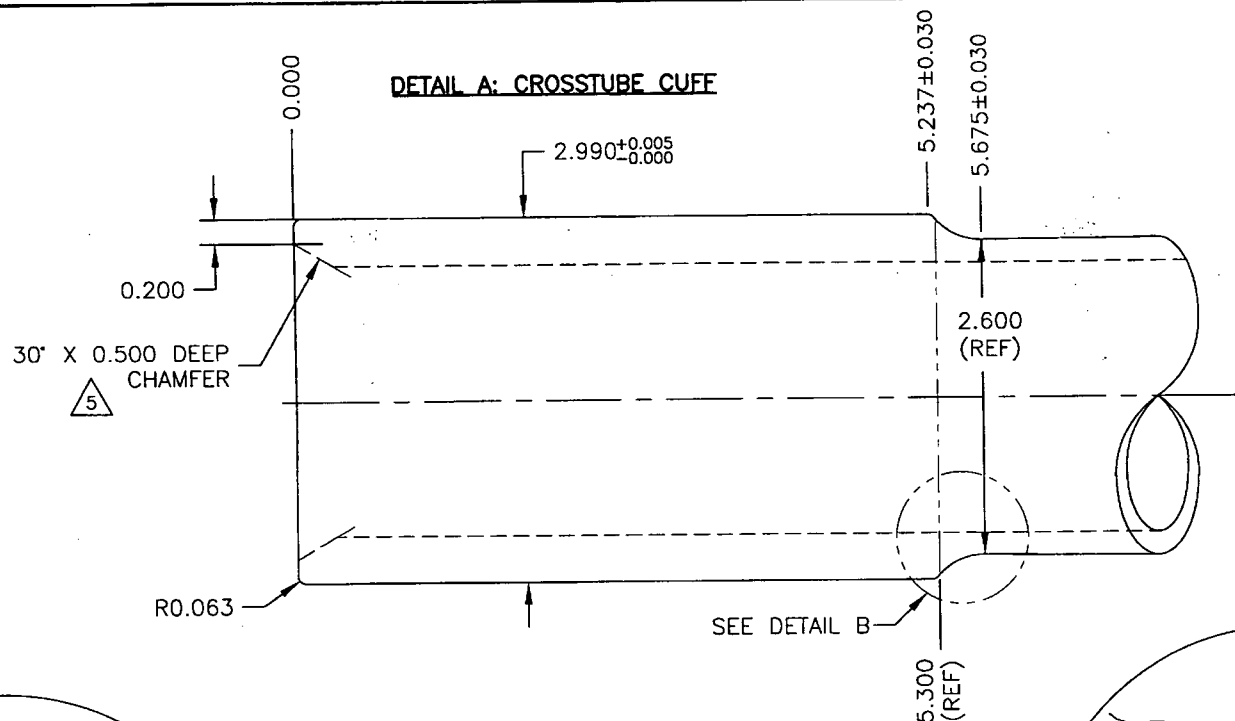
DEO ATTACHED

COPYRIGHT © 2000 BY DART AEROSPACE LTD.		DESIGN PH	DRAWN BY PH	DART DART AEROSPACE LTD. WINDSOR, ONTARIO, CANADA
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED J	APPROVED A	DRAWING NO. D212-664-241
DATE 07.03.08		TITLE CROSSTUBE ASS'Y (205/212 HI AFT)		
		SCALE 1:10		

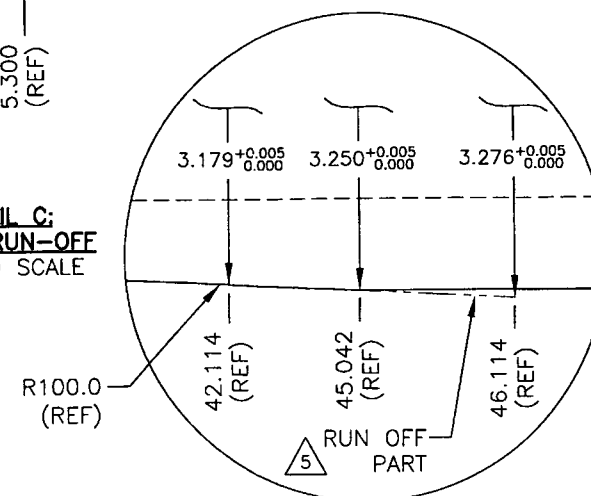
RELEASED
67.04.24
PER ECN 889

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WITHOUT NOTICE
WORK ORDER
NO. 52973



**DETAIL C:
TAPER RUN-OFF**
NOT TO SCALE



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DESIGN

PH

DRAWN BY

PH

DART

DART AEROSPACE LTD.
HAMPSHIRE, ONTARIO, CANADA

CHECKED

PH

APPROVED

PH

DRAWING NO.
D212-664-241

REV. C

DATE

07.03.08

TITLE

CROSSTUBE ASS'Y (205/212 HI AFT)

SHEET 3 OF 3

SCALE

1:1

DRAWING NO. D212-664-241	TITLE CROSSTUBE	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-241-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>GP</i>	CHECKED <i>RP</i>	MFG. APPR. <i>ER</i>	APPROVED <i>MD</i>	DE APPR. <i>HA</i>			
DATE 09.05.01	DATE 09.06.15	DATE 09.06.15	DATE 09/06/16	DATE 09/06/16			

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)

THE D212-664-241B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-241 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-241 CROSSTUBE.

RELEASED
09/06/22 *HA*

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 52973

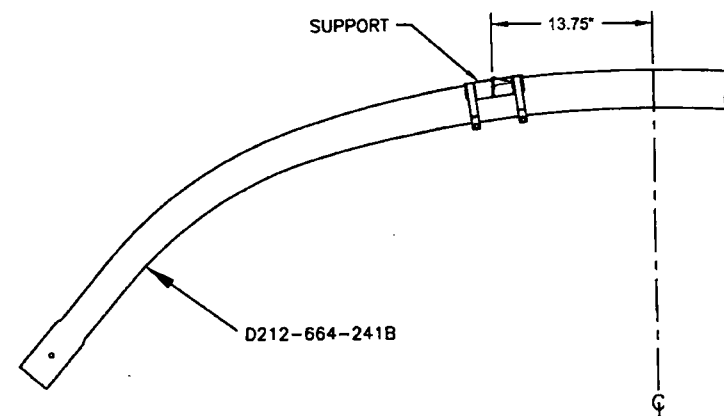


FIGURE 1 - SUPPORT INSTALLATION

REFERENCE ONLY

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	-101	-201	-203	Part Number	Description
	X			D212-664-101	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
		X		D212-664-201	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
			X	D412-664-203	CROSSTUBE INSTALLATION, 412 HIGH AFT
1	1			D212-664-141	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
2		1		D212-664-241	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
3			1	D412-664-243	CROSSTUBE ASSEMBLY, 412 HIGH AFT
10	2			* D2893-1	SUPPORT
11	4			* D3595-063-450	RUBBER CUSHION
12	4			* MS21920-25	CLAMP (OR MS21042-26)
13	4			AN6-35A	BOLT
14	4			AN6-36A	BOLT
15	6			MS21042L6	NUT (OR MS21042-6)
16	18			AN960JD616	WASHER
20		2		* D2940-1	SUPPORT
21		4		* D3595-063-530	RUBBER CUSHION
22		4		* MS21920-28	CLAMP (OR MS21042-30)
23		4		AN6-40A	BOLT
24		2		AN6-41A	BOLT
25		6		MS21042L6	NUT (OR MS21042-6)
26		18		AN960JD616	WASHER
30			1	* D2896-1	SUPPORT
31			2	* D2856-600-1009	ABRASION STRIP
32			2	* D3595-063-570	RUBBER CUSHION
33			4	* MS21920-28	CLAMP
34			2	* MS21920-30	CLAMP (OR MS21042-32)
35			4	AN6-40A	BOLT
36			2	AN6-41A	BOLT
37			6	MS21042L6	NUT (OR MS21042-6)
38			18	AN960JD616	WASHER
39			2	* D3189-1	CHAFING SHIELD
50	1			D3428-1	PLACARD

*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE
NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA
SKIDTUBES.

52973



LIQUID PENETRANT TEST REPORT

P- 15307

PAGE 1 OF 1

CLIENT: DRY AGES PREP L.L.C. DATE: NOV 5, 2009 TIME: AM 1 PM 13

ATTENTION: ALAN J. CORNWAK ACUREN JOB NO.: 100-095001633

ADDRESS: 1270 ABEL BREEZ ST POWO NO.: 10711

AWAKES BAY ONT WORK LOCATION: 1545 P. AVENUE INLET

K6A 3K7 ACCEPTANCE STD.: ASTM 1417 REV. DATE: 2007

PROJECT: F.P.C. ON CROSS TUBES

ITEM(S) EXAMINED: 10 UNITS

JOB DESCRIPTION: WET FLUORESCENT LIQUID PENETRANT INSPECTION PROCEDURE NO.: LT-002 REV. DATE: 1/2002 TECHNIQUE NO.: LT-002 REV. DATE: 1/2002

PART NO.: --- MATERIAL: ALUMINUM THICKNESS: ---

SCOPE: CARRIED OUT 100% EXTERNAL

TEST DETAILS

METHOD: ☒ FLUORESCENT ☐ VISIBLE ☐ WATER WASH ☐ SOLVENT REMOVAL ☐ POST EMULSIFIER

FAMILY BRAND: MAINFLEX BLACK LIGHT SN: 1459 ☒ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc

PENETRANT: FLUO 7 MINIMUM DWELL TIME: 45 MIN. LIGHTING EQUIP.: ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE

PENETRANT REMOVER: H20 MINIMUM DRY TIME: >10 MIN. OTHER: LABINO

DEVELOPER: SD 52 MINIMUM DWELL TIME: 10 MIN. LIGHT METER SN: --- CAL DUE DATE: DEC. 8, 09

DEVELOPER TYPE: ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION: ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL

SURFACE TEMPERATURE: ☐ < -4°C/20°F ☐ -4°C/20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- (<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL)		ACCEPT	REJECT
ITEM	COMMENTS		
1	CROSS TUBE W.O. 51935	/	
1	CROSS TUBE W.O. 51936	/	
1	CROSS TUBE W.O. 53314	/	
1	CROSS TUBE W.O. 53315	/	
1	CROSS TUBE W.O. 52970	/	
1	CROSS TUBE W.O. 52971	/	
1	CROSS TUBE W.O. 52859	/	
1	CROSS TUBE W.O. 52860	/	
1	CROSS TUBE W.O. 52972	/	
1	CROSS TUBE W.O. 52973	/	

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the customer/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibility of the customer/operator and the customer/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree of care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE: Alan Titley SIGNATURE: [Signature] DTR# E-85848

TECHNICIAN (SIGNATURE): [Signature] REPORT REVIEWED BY: [Signature]

NAME (Print): Alan Titley 1ST TECHNICIAN: [Signature] 2ND TECHNICIAN: [Signature]

CGSB Level: 2 SNT Level: 2 CGSB Level: --- SNT Level: ---

CGSB Reg. No: 6066 CGSB Reg. No: ---

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1013 832

PT Sept 2004